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Small Bowel Volvulus Complicating Common Incomplete Mesentery in an Adult: A Case Report

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Abstract **Case Report**

The common incomplete mesentery is defined as an intestinal malrotation occurring very rarely in adults, this intestinal anomaly can lead to serious complications as the small bowel volvulus whom its diagnosis can be established in emergency,in patients with acute intestinal obstruction, or even shock, or repeated abdominal pain often. Clinical symptoms are dominated by abdominal pain and vomiting but nonspecific, diagnosis is confirmed by CT scan and surgery. We here report the case of a 75-year-old patient admitted with total small bowel volvulus complicating common incomplete mesentery, diagnosed based on abdominal computed tomography (CT) scan and confirmed at laparotomy.

Keywords: Small bowel volvulus, case report, common mesentery, intestinal occlusion, CT scan, surgery.

INTRODUCTION

The common mesentery is the result of an anomaly in the rotation of the primitive umbilical loop, thus constituting a meso common to the entire intestinal loop and an extremely short mesentery root [1]. It is most often associated with a lack of attachment. It can lead to serious complications, sometimes fatal, which generally occur during the neonatal period or at the pediatric age. The fact that this pathology is exceptional in adulthood and that its symptomatology is quite varied is a source of many errors and diagnostic and therapeutic delays to the point that the majority of cases are diagnosed post-mortem. The causes of its late revelation are still unknown. The most known complication is total bowel volvulus, which occurs when the type of rotation anomaly is incomplete 180° common mesentery [2].

CASE REPORT

We report with clinical case about an 75-year-old male with no known pathological history admitted to our service with acute intestinal obstruction, the symptomatology had been evolving for five days before his admission and was made up of abdominal pain of rapidly progressive intensity with vomiting initially food then bilious, all evolving in a context of apyrexia and deterioration of the general state.

The physical examination on admission found a patient aware with a GCS of 12, correct blood pressure 110mmHg/80mmHg; a heart rate of 80 beats/min; respiratoire rate at 14 cycles/minute; afebrile at 37°C. In addition the abdominal examination found a distended abdomen, tympanic with generalized contracture.

The decision was to hospitalize the patient, make Monitoring and oxygen therapy with a high concentration mask, taking a peripheral venous line, setting up a gastric and bladder probe) he had significant gastric stasis ; he benefited from a vascular filling with physiological saline 20cc / kg in 30 minutes and parallel realization of a biological and radiological assessment.

Biological assessment found Hyperleukocytosis at 12,000 elements/mm3 with PNN predominance with correct renal function, CRP was at 80 mg/l. Abdominal C-/C+ CT scan found a swirl image involving the first jejunal loop, the superior mesenteric artery and the superior mesenteric vein, with the coecum attached to the subhepatic and the grelic loops on the right (Figure 1) the diagnosis of occlusion on incomplete common mesentery was made and the patient was urgently admitted to the operating room under antibiotic coverage based on ceftriaxone and metronidazole.

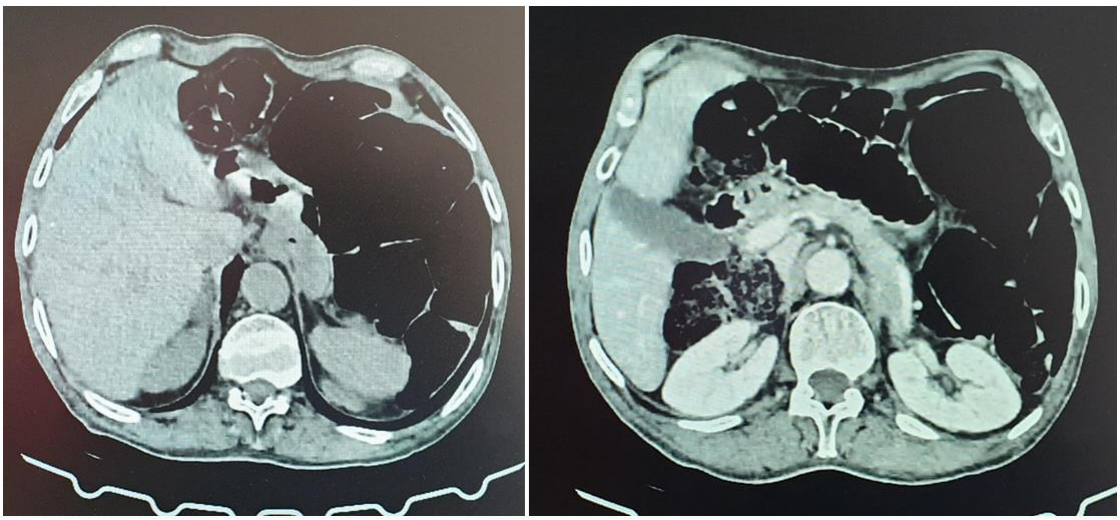

Figure 1

The surgical procedure was initiated by median laparotomy straddling the enlarged umbilicus above and below the umbilical at the exploration we objectify a volvulus of the small bowel distended non necrotic but there was a perforation at the distal portion of the small intestine, beside the caecum was localized subhepatic, the act was to untwist it and correcting the position , converting the pperforation into ileostomy placed on the right. The outcome is favorable.

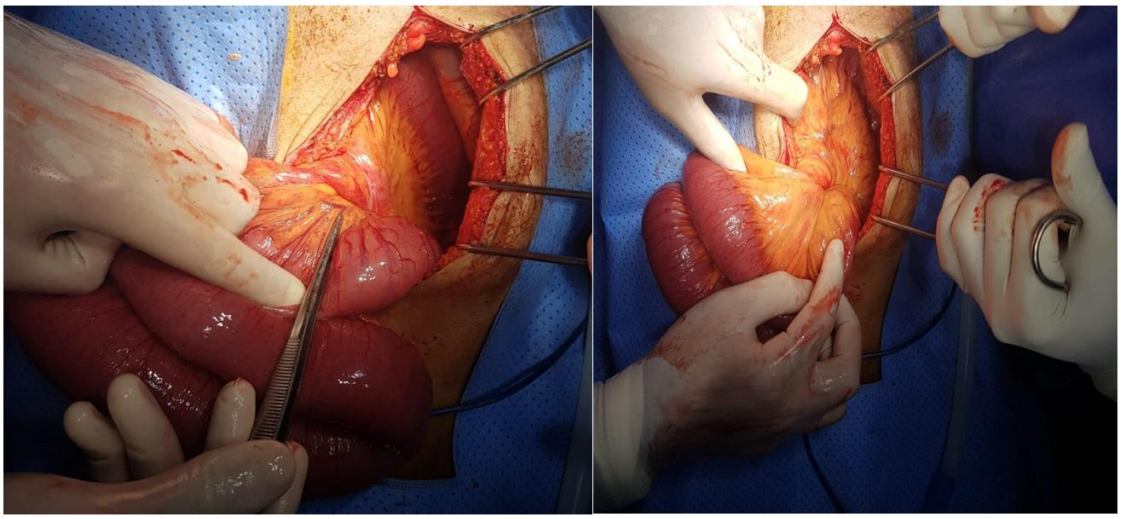

Figure 2: Intra-operative photographs demonstrating Midgut volvulus

DISCUSSION

The small bowel volvulus is a well-known emergency for neonatologists and pediatric surgeons [2]. The exceptional character of this pathology in adulthood, even unknown to surgeons, increases the risk of delay or absence of diagnosis and a threat to the vital prognosis, when the treatment is not adapted or too late [3, 4].It is estimated that the prevalence of these congenital malformations in adulthood is around 0.2% to 0.5% [5].

The small bowel volvulus etiologies can be classified to 2 categories: primary or secondary causes.Primary volvulus is occurring without anatomical defects whereas secondary volvulus is that happening secondary to anatomical defects, which is the most common in western society [12, 13].

Authors explain that primary small bowel volvulus is based on strong abdominal muscles, high peristaltic tone as well as the presence of a bulky meal in the small bowel, a longer mesenteric length and shortness of the mesenteric root would induce abnormal mobility of a segment of small bowel predisposing to volvulus [14].

Secondary volvulus related conditions are congenital malrotation, adhesions, Meckel's diverticulum, ileal atresia, meconium ileus, jejunostomy, leiomyoma of the mesentery, Ascaris infestation and small bowel tumors [15-17].

The diagnosis can be made in a wide variety of circumstances, such acute intestinal occlusion even a state of shock, repeated abdominal pain more or less associated with transit disorders; more rarely, following laparoscopic surgery, as described after cholecystectomy, appendectomy, or bariatric surgery, or more anecdotally, on the occasion of rectorrhagia revealing colon cancer [14] and during an episode of acute pancreatitis related to intestinal obstruction [2].

Plain abdominal radiographs may be normal or may show small bowel obstruction; can show dilated bowel loops with a 'spiral nebula' in the midabdo-men. Colour Doppler sonography can be used to demonstrate a whirlpool sign, an objective sign of midgut volvulus. The sensitivity, specificity and positive predictive value of the clockwise whirlpool sign for midgut volvulus are 92%, 100% and 100%, respectively [6].

The scan abdominopelvic CT is the key exam to diagnose the small bowel volvulus on rotation anomaly which shows the sign of the "whirlwind" seeming indeed to be pathognomonic for the majority of authors. It corresponds to the tendril of the mesentery visible in the median position, in front of the aorta and at the level of the superior mesenteric artery, around which the superior mesenteric vein and the proximal jejunum "wrap around". X-rays with injections make it possible to visualize the verticalization, or the inversion, of the superior mesenteric vessels, with a vein placing itself above or to the left of the artery [7, 8], although this sign is not steady [9].

Early diagnosis and surgical treatment is essential to prevent complications like ischemia and gangrene due to small bowel volvulus, and also reduce the mortality quoted as high as 42–67% [10-11].

The treatment is based on the surgery, Some authors have recommended simple devolvulation, some recommend resection and anastomosis in all small bowel volvulus regardless if necrotic bowel is present or not, especially for the primary volvulus [18].

The treatment of secondary volvulus focuses on the correction of the underlying cause, which will need further management.

Firstly, devolvulation begins with a careful exteriorization of the entire mass of the small bowel outside the abdominal cavity, which alone allows a satisfactory reduction of the volvulus by making one or more successive half- turns in the opposite direction to the volvulus, after that the release of the cecum is done by section of ladd's flanges,an appendectomy is performed, and replace the small bowel in the abdominal cavity [2].

CONCLUSION

This pathology is exceptional complication in adulthood; its mortality is elevated due to the diagnostic delay. Symptoms are non-specific and the radiological examination is the key diagnosis, the prognosis of total volvulus of the small bowel is that of the occlusive Is depending on the time taken for management.

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